



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,338	03/30/2004	Anant Achyut Setlur	RD30742/GLOZ 200133	5092
27885	7590	06/15/2006	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			PATEL, ASHOK	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EX

<b>Office Action Summary</b>	<b>Application No.</b> 10/813,338	<b>Applicant(s)</b> SETLUR ET AL.	
	<b>Examiner</b> Ashok Patel	<b>Art Unit</b> 2879	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 31-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>033004</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2879

1. Applicant's election without traverse of group II, claims 14-30, in the reply filed on 03/31/2006, is acknowledged. Applicant proposed different restriction requirement. The Examiner respectfully disagrees with applicant since it is believed that language of both independent method claims (claims 1 and 31) is parallel to each other therefore the Examiner prefers that both the method claims should stay together. Similarly, language of both independent product claims (claims 14 and 29) is parallel to each other and therefore the Examiner prefers that both the product claims should stay together. Claims 1-13 and 31-37 are withdrawn from consideration. An action on merits including claims 14-30 is as follows.

2. The disclosure is objected to because of the following informalities: claim 25, lines 4 and 5 show same formulae. Claim 26, line 6: the term  $C_{12}$  (carbon) appears to be incorrect. The correct term should be Chlorine element (Cl) in place of carbon. Claim 22, the term  $Eu^{+2}-Mn^{+2}$  should be corrected appropriately. Appropriate correction is required.

3. Claims 14-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

Art Unit: 2879

out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, the term "said light emitting diode and laser diode" lacks antecedent basis.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 14-16, 19 and 22-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Srivastava et al (USPN 6,501,100).

As to claims 14 and 29, Srivastava et al disclose applicant's claimed light emitting device including: a semiconductor light emitter (1) and at least two phosphor materials (first phosphor 3 as disclosed at col. 5, lines 39-61; second phosphor 4 as disclosed at col. 6, lines 5-35), wherein a first phosphor material is disposed closer to said light emitting diode or laser diode than a second phosphor material, said first phosphor material having at least one of a shorter

Art Unit: 2879

decay time and a lower absorption of radiation emitted from said semiconductor light emitter than said second phosphor material.

As to claim 15, Srivastava et al disclose the light emitter including a light emitting diode or a laser diode.

As to claim 16, since the material of the first and second phosphors of Srivastava et al's device are same as what is claimed by applicant, Srivastava et al's diode or laser would also emit between about 350 and 440 nm.

As to claim 19, Srivastava et al disclose so many additional phosphor materials (col. 5, line 39 col. 6, line 36).

As to claim 22, Srivastava et al disclose the first phosphor including  $\text{Eu}^{+2}$  and  $\text{Mn}^{+2}$  phosphors (col. 5, lines 39-61).

As to claims 23 and 25, Srivastava et al disclose the first phosphor material including  $(\text{Sr}, \text{Ca}, \text{Ba}, \text{Mg}, \text{Zn})_2\text{P}_2\text{O}_7:\text{Eu}^{+2}$ ,  $\text{Mn}^{+2}$  (col. 5, lines 39-61, wherein A is at least one of Sr, Ca, Ba or Mg).

As to claims 24 and 26, Srivastava et al disclose the first phosphor material as  $(\text{Ca}, \text{Sr}, \text{Ba}, \text{Mg})_{10}(\text{PO}_4)_6\text{Cl}_2:\text{Eu}^{+2}$  (col. 6, lines 5-36, example d, wherein A is at least one of Sr, Ca, Ba or Mg).

As to claims 27, 28 and 30, since the material selection of the first and second phosphors of Srivastava et al's device is same as what is claimed by applicant, Srivastava et al's light

Art Unit: 2879

emitting device would also include: a color temperature between about 2,500 and 10000K, CRI of at least 50 and the first phosphor material with lower quenching than that of the second phosphor material.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srivastava et al, as applied to claim 14.

As to claims 17 and 18, Srivastava et al do not disclose the first phosphor material applied in a matrix configuration as claimed by applicant. However, one of ordinary skill in the art

Art Unit: 2879

would have been able to provide the first or second phosphor in any suitable known configuration since deposition of the phosphor is not limited to the matrix configuration. Also applicant's claimed matrix configuration does not solve any particular problem that is not solved by a prior art deposition configuration of the first (or second) phosphor material. In light of this applicant's claimed matrix configuration would have been a matter of obvious design choice to one of ordinary skill in the art.

As to claims 20 and 21, since the first and second phosphor materials of Srivastava et al's device is same as what is claimed by applicant, decay times of the first and second phosphor materials of Srivastava et al's device would be same as what is recited in applicant's claims 20 and 21.

As to applicant's claimed mean particle size of the first and second phosphor material, it would have been obvious to one of ordinary skill in the art to choose suitable mean particle size of the first and second phosphor material, since it has been held that where general conditions of the claim are discovered in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Art Unit: 2879


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Srivastava et al, Srivastava et al, Setlur et al, Setlur et al and Miller et al each are cited for showing a lighting device including two phosphor materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ashok Patel  
Primary Examiner  
Art Unit 2879